What is claimed is:

1. A system for monitoring an optical output/wavelength of a laser source, comprising:

a laser source control means for controlling the laser source;

an optical/wavelength monitoring means for monitoring an optical output/wavelength of the controlled laser source;

a TEC control means for controlling a thermo-electric cooler (TEC) in order to constantly maintain the laser source of the optical output/wavelength monitoring means to have a predetermined temperature;

a temperature control means for controlling a heater and a thermistor to set an etalon to a predetermined temperature, wherein the heater is attached on the optical output/wavelength monitoring means and the thermistor is attached on the heater;

a comparison means for comparing the optical output signal and the wavelength signal, each of which is monitored at the optical output/wavelength monitoring means; and

a processing means for comparing values of the compared signals with a preset value to control an input current or a temperature of the laser source.

2. The system as recited in claim 1, further comprising a temperature monitoring means for sensing an external temperature of the optical output/wavelength monitoring means

in case it is unnecessary to control the temperature of the laser source.

3. The system as recited in claim 1, wherein the optical output/wavelength monitoring means includes:

a laser source for generating a laser beam according to a control signal outputted from the laser source control means;

a collimation unit for adjusting a divergence angle of the laser beam outputted from the laser source;

an optical output monitoring unit for sensing an intensity of the laser beam outputted from the collimation unit;

a filtering unit for filtering the laser beam outputted from the collimation unit;

an optical wavelength monitoring unit for sensing the wavelength generated from the filtering unit;

a first mounting unit for mounting the optical output monitoring unit;

a second mounting unit for mounting the optical wavelength monitoring unit;

a first alignment unit for aligning the optical output monitoring unit, the filtering unit, the optical wavelength monitoring unit, the first mounting unit and the second monitoring unit, and for minimizing a heat conducted from a heater to the optical output monitoring unit, the filtering unit, the optical wavelength monitoring unit, the first mounting unit and the second mounting unit, the first

alignment unit having a metal pattern to process an electric signal;

a heating unit for changing a temperature of the filtering unit;

a first temperature sensing unit for sensing a temperature of the heating unit, to thereby control the temperature of the filtering unit;

a second alignment unit for aligning the laser source, the optical output monitoring unit, the filtering unit, the optical wavelength monitoring unit, the first mounting unit and the second mounting unit; and

a second temperature sensing unit for sensing a temperature of the second alignment unit.

4. The system as recited in claim 3, wherein the optical output/wavelength monitoring means utilizes a total laser beam collimated by the collimation means or one portion of the laser beam split by an optical splitter which is disposed in a rear of the collimator means, the optical splitter splitting the collimated laser beam into said one potion and the other portion in which the said the other portion is used for an optical transmission.

5. The system as recited in claim 3, wherein the optical output monitoring unit is disposed at a predetermined position of a laser beam pathway, to thereby split the laser beam into a first portion for use in monitoring the optical output and a

second portion for use in monitoring the wavelength, the predetermined position being adjusted in a horizontal direction with respect to the laser beam.

6. The system as recited in claim 3, wherein the first alignment unit makes all parts for monitoring the optical output/wavelength be assembled as an integrated structure by using a metal-patterned substrate, and the first alignment unit enables to adjust an optical alignment by moving the integrated structure while monitoring the signal.

7. The system as recited in claim 3, wherein the heating unit is attached on a predetermined location of the filtering unit in a shape that a power consumption is minimized, and the heating unit is controlled by the temperature control means together with the first temperature sensing unit, thereby maximizing a transmission characteristic of the filtering unit and a wavelength monitoring capability.

8. The system as recited in claim 1, wherein the processing means compares a ratio of the signal monitored at the optical output monitoring unit and the signal monitored at the optical wavelength monitoring unit with the preset value so as to stabilize the wavelength by controlling the input current or the temperature of the laser source, the processing unit having a program to compare each target wavelength channel with a corresponding preset value for monitoring and

stabilizing each channel wavelength.

9. An apparatus for monitoring an optical output/wavelength, comprising:

a laser source for generating a laser beam according to a control signal outputted from a laser source control means;

a collimation means for adjusting a divergence angle of the laser beam outputted from the laser source;

an optical output monitoring means for sensing an intensity of the laser beam outputted from the collimation means;

a filtering means for filtering the laser beam outputted from the collimation means;

an optical wavelength monitoring means for sensing the wavelength generated from the filtering means;

a first mounting means for mounting the optical output monitoring means;

a second mounting means for mounting the optical wavelength monitoring means;

an alignment means for aligning the optical output monitoring means, the filtering means, the optical wavelength monitoring means, the first mounting means and the second monitoring means and for minimizing a heat conducted from a heater to the optical output monitoring means, the filtering means, the optical wavelength monitoring means, the first mounting means and the second mounting means in sequence, the alignment means having a metal pattern to process an electric

signal;

a heating means for changing a temperature of the filtering means; and

a temperature sensing means for sensing a temperature of the heating means, to thereby control the temperature of the filtering means.

10. The apparatus as recited in claim 9, wherein the collimation means adjusts the divergence angle and an intensity of the laser source and is aligned at a predetermined position of a laser beam pathway on a condition that a portion of the laser beam shielded by the optical output monitoring means is less than a predetermined ratio with respect to a total laser beam.

11. The apparatus as recited in claim 10, wherein the predetermined ratio is substantially less than 50%.

12. The apparatus as recited in claim 9, wherein the alignment means uses a substrate having metal patterns formed on both surfaces thereof, in which one metal pattern is used for assembling parts and the other is used for optically aligning the assembled parts with the laser source while monitoring the signal.

13. The apparatus as recited in claim 9, wherein the heating means controls the temperature of the filtering means,

the heating means being disposed below a bridge-shaped structure to minimize a path of a heat conduction between the heating means and an exterior.

14. The apparatus as recited in claim 9, wherein the heating means is disposed on the filtering means which is formed over the alignment means so that the heat conducted from the heating means to the alignment means is minimized and a height of the filtering means is optimized with respect to an optical axis of the laser source.

15. The apparatus as recited in claim 9, wherein the heating means is assembled on the alignment means and the filtering means is disposed on the heating means and is assembled with a C-shaped structure in order for the heat to be conducted well.

16. The apparatus as recited in claim 9, wherein filtering means controls a transmission characteristic by virtue of a temperature control so as to maximize a wavelength monitoring capability such that a temperature change at a central portion of the filtering means and a change in a temperature difference of both ends of the filtering means are induced to thereby control a position of an etalon resonance peak of the filtering means and a bandwidth of the peak.

17. The apparatus as recited in claim 9, wherein

filtering means controls the transmission characteristic by virtue of the temperature control so as to maximize the wavelength monitoring capability such that a left or a right slope of a transmission spectrum filtered at the filtering means is selected in order to minimize the temperature change.

18. The apparatus as recited in claim 9, wherein filtering means controls a transmission characteristic by virtue of a temperature control so as to maximize a wavelength monitoring capability such that the temperature of the filtering means is set higher than a maximum external temperature for using a wavelength stabilizer in case the wavelength stabilizer is exposed to an external temperature, thereby monitoring the wavelength regardless of the external temperature.

19. The apparatus as recited in claim 9, wherein an air layer is provided under the filtering means to thermally isolate the filtering means from an external object so that the temperature of the filtering means is controlled.

20. The apparatus as recited in claim 9, wherein the laser beam collimated by the collimation means is totally used for monitoring the optical output/wavelength or one portion of the laser beam split by an optical splitter which is disposed in a rear of the collimator means is used for monitoring the optical output/wavelength, the optical splitter splitting the

collimated laser beam into said one potion and the other portion in which the said the other portion is used for an optical transmission..